

CONSTRUCTION SPECIFICATION

83. TIMBER FABRICATION AND INSTALLATION

1. SCOPE

The work shall consist of the construction of timber structures and timber portions of composite structures.

2. MATERIALS

Structural timber and lumber shall conform to the requirements of Material Specification 584. Treated timber and lumber shall be impregnated with the specified type and quantity of preservative and in the manner specified in Material Specification 585.

Hardware, except cast iron, shall be galvanized as specified for iron and steel hardware in Material Specification 582. Unless otherwise specified, structural steel shapes, plates and rods shall not be galvanized. Nuts, driftbolts, dowels and screws shall be either wrought iron or steel.

Steel bolts shall conform to the requirements of ASTM A 307. When galvanized or zinc-coated bolts are specified, the zinc coating shall conform to the requirements of Material Specification 582.

Washers shall be ogee gray iron castings or malleable iron castings unless washers cut from medium steel or wrought iron plate are specified on the drawings or in Section 7 of this specification. Cast washers shall have a thickness equal to the diameter of the bolt and a diameter equal to four (4) times the thickness. The thickness for plate washers shall be equal to one-half (1/2) the diameter of the bolt, and the sides of the square shall be equal to four (4) times the diameter of the bolt. Holes in washers shall have a maximum diameter of one-eighth (1/8) inch larger than the diameter of the bolt. Split ring connectors, tooth ring connectors and pressed steel shear plate connectors shall be manufactured from hot-rolled, low carbon steel conforming to the requirements of ASTM A 711, Grade 1015. Malleable iron shear plate connectors and spike grid connectors shall be manufactured in conformance with the requirements of ASTM A 47, Grade No. 35018. All connectors shall be of approved design and the type and size specified.

Structural shapes, rods and plates shall be structural steel conforming to the requirements of Material Specification 581. No welds will be permitted in truss rods or other main members of trusses or girders.

3. WORKMANSHIP

All framing shall be true and exact. Timber and lumber shall be accurately cut and assembled to a close fit and shall have even bearing over the entire contact surfaces. No open or shimmed joints will be accepted. Nails and spikes shall be driven with just sufficient force to set the heads flush with the surface of the wood. Deep hammer marks in wood surfaces shall be considered evidence of poor workmanship and may be sufficient cause for rejection of the work.

Holes for round driftpins and dowels shall be bored with a bit one-sixteenth inch smaller in diameter than that of the driftpin or dowel to be installed. The diameter of holes for square driftpins or dowels shall be equal to one side of the driftpin or dowel. Holes for lag screws shall be bored with a bit not larger than the body of the screw at the base of the thread.

Washers shall be used in contact with all bolt heads and nuts that would otherwise be in contact with wood. Cast iron washers shall be used when the bolt will be in contact with earth. All nuts shall be checked or burred effectively with a pointed tool after finally tightened.

Unless otherwise specified, surfacing, cutting and boring of timber and lumber shall be completed prior to treatment. If field cutting or field repair of treated timber and lumber is approved, all cuts and abrasions shall be carefully trimmed and coated with two paint on or swab-applied applications of a wood preservative containing not less than 5 percent (by weight) pentachlorophenol. A copper metal solution of 2 percent (by weight) of copper naphthenate may be used as a replacement for pentachlorophenol, which is a controlled substance. After timber assembly, any unfilled holes shall be plugged with tightly fitting wooden plugs that have been treated with preservative as specified.

4. HANDLING AND STORING MATERIALS

All timber and lumber stored at the site of the work shall be neatly stacked on supports a minimum of 12 inches above the ground surface and protected from the weather by suitable covering(s). Untreated material shall be staked and stripped to permit free circulation of air between the tiers and courses. Treated timber may be close-staked. The ground surface for the stockpile of timber and lumber shall be free of weeds and rubbish. The use of cant hooks, peavies, or other pointed tools, except end hooks will not be permitted in the handling of structural timber and/or lumber. Treated timber shall be handled with rope slings or other methods that will prevent the breaking or bruising of outer fibers, or penetration of the surface in any manner.

5. PAINTING

Except as otherwise specified, surfaces designated for painting shall be prepared and painted in accordance with Construction Specification 84.

6. MEASUREMENT AND PAYMENT

Method 1 The unit of measurement of lumber and timber will be the number of thousand feet board measure (MBM) of each type, size, species and grade of lumber and timber installed in the completed structure. The quantity of each type, size, species and grade will be computed from the nominal dimensions and actual lengths of the pieces in the completed structure and will not include waste timber used for erection purposes) such as falsework or temporary sheeting and bracing) or

any portion of any pile or other round timber. The total quantity of lumber and timber in each type, size, species and grade will be computed to the nearest 0.01 MBM.

The unit of measurement of plywood will be the number of square feet of each type, species, grade and thickness installed in the completed structure.

Payment for each type, size, species and grade of lumber and timber will be made at the contract unit price for that type, size, species and grade. Payment for each type, species, grade and thickness of plywood will be made at the contract unit price for that type, species, grade and thickness. Such payment will be considered full compensation for completion of the work.

Method 2 No measurement of material quantities will be made. Payment for each structure, complete in place, will be made at the contract lump sum price for that structure. Such payment will be considered full compensation for completion of the work.

Method 3 For items of work for which specific unit prices are established in the contract, measurement and payment for each structure unit, except those for which a linear foot payment is established, will be counted and payment made at the contract unit price. Items for which a linear foot payment is established will be measured to the nearest linear foot and payment will be made at the contract unit prices as appropriate. Such payment will be considered full compensation for completion of the work.

All Methods The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 7 of this specification.